

Myths & Maths

Explore maths differently:
feel, imagine and share
for a better understanding



www.myths-maths.eu

A project
co-funded by the
European Union





*Scan to discover
the project website*

www.myths-maths.eu

What is Myths & Maths?

A *different approach*
to mathematics in school

Mathematics? For many, it's formulas to memorize, correct answers to give, the fear of making mistakes, and a logic that feels imposed.

And yet, it's a **living practice**: we explore, we wonder, we discuss, we make mistakes that refine and correct our intuition as we move forward.

Like in a story, we progress step by step, we explore, get lost, start again, and slowly, through persistence, we find our way and reach new understanding.

Imagination plays a key role — but it builds on real data and

rules. Creativity often springs from constraint.

Just as in mathematics, the structured nature of stories — with their rules and patterns — shows that rigor can be a path to invention. It's in the tension between order and imagination that the joy of constructing something ourselves can emerge.



Objectives

From *observation* to *abstraction*

- Root mathematics in sensory observation, to give meaning — because imagination is born from **perception**.

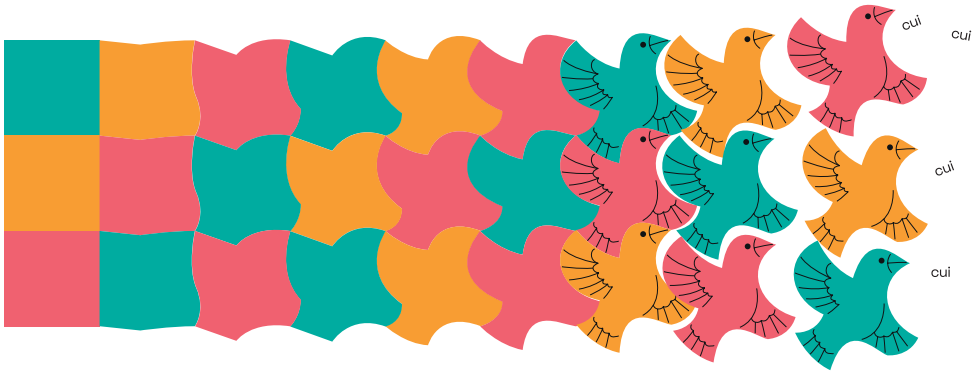
- Use the mental imagery offered by stories and metaphors which, step by step, through analogy, lead toward abstraction. Doing mathematics means mentally manipulating data, structures, and objects.

- Make mathematics more accessible without denying its difficulty. Understanding doesn't happen instantly: it requires looking differently, changing our mental habits, focusing attention, and persevering in effort. It also involves engaging in dialogue with others and considering their point of view.

All of these are **essential skills** — both for storytelling and for doing mathematics.

Tales also provide a way to explore fundamental mathematical concepts: sharing, measurement, perimeter, symmetry, sequences, large numbers, logical reasoning...

By multiplying the entry points into mathematical thinking, Myths & Maths also seeks to **reduce inequalities** through an inclusive approach that values every child — from preschool to lower secondary school.



In practice

Entering *mathematical thinking* through *storytelling*

Tales — just like mathematics — offer a space of fiction, simulation, and freedom, entered with the phrase “Once upon a time...” or “Let x be...” Starting from simple and coherent situations in a tale, children engaged in active listening create their own mental imagery. They follow the sequence of events in the story to better

remember it, which in turn allows them to retell it precisely, in their own words, while maintaining its internal logic. Active listening, imagination, sequential, auditory and visual memory, reasoning, confidence, vocabulary development, discovering symbolic language...

All of these are **psychosocial skills**, also known as life skills,

that support progress in mathematics.

And what about the **mathematical concepts**?

To approach division, we begin with stories of sharing, such as *The Two Bears and the Fox*.

To introduce perimeter, we tell *The Legend of Dido*, and for large numbers, *The Legend of Sissa...*

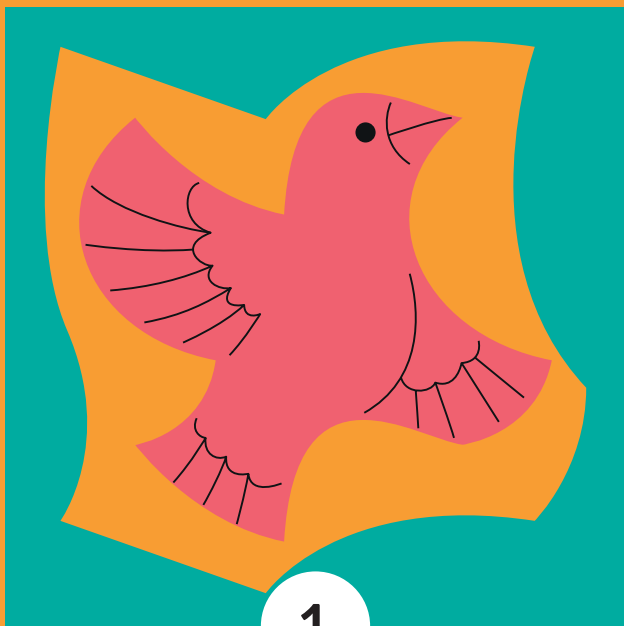
So many tales full of twists and surprises — just asking to be told and retold by students.

This is how abstraction is gradually introduced, from the earliest school years, supported by mental imagery that will serve as a foundation for future progress.

By mobilizing emotion and play, by nurturing the joy of exploration — alone and with others — students experience a form of gratification that is not immediate, but very real, and earned through effort.



Our project is built around **3 key areas**



1

Mental images

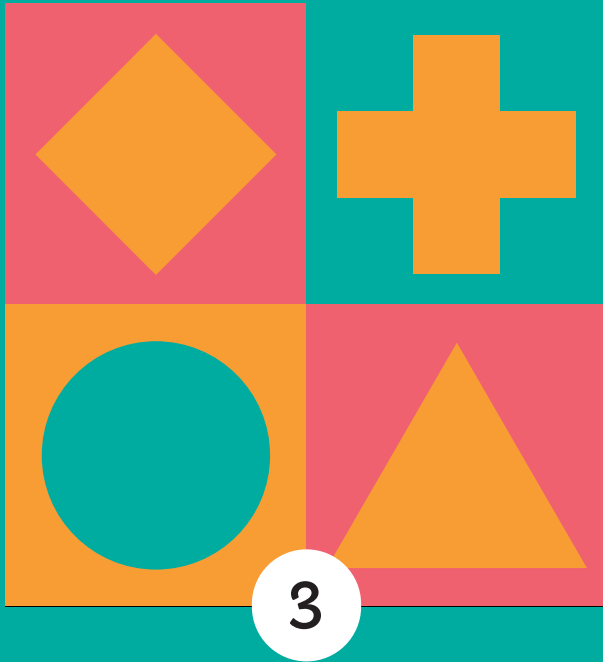
Create the mental representations that are essential for abstract work, based on *sensitive experience*.



2

Research

The student is like the *hero of a fairy tale*, searching for a solution by taking the necessary time and accepting uncertainty.



Logic

Understand the *narrative structure* of tales, as well as the logic of mathematical reasoning.

Storytellers. Number tellers.

Change preconceived ideas about mathematics, which all too often make it an intimidating and abstract discipline.

Link mathematics to *thought and language* from the earliest years of schooling



Tales prepare
the mind for the
adventure of
mathematics

Building mental
images, essential
for abstract
mathematical
thinking



Math is a game for
the imagination,
designed to change
the way we perceive
the world

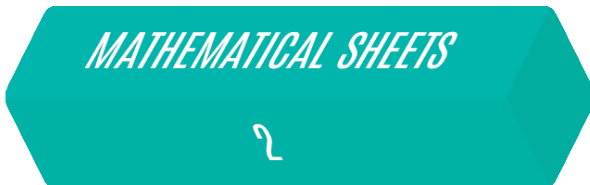


Teaching resources



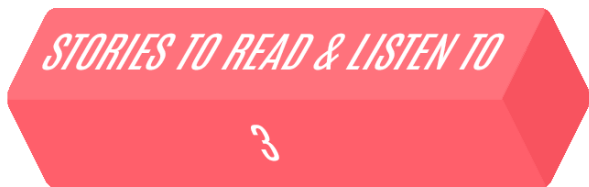
16
activity
sheets

Workshops to stimulate students' imagination, starting with observation. Because observing is already imagining. That's where mathematics is born. From a look of wonder.



16
maths
story-based
sheets

These sheets are divided into two parts: **myth** and **math**. On one side, tips to help you get to grips with the story, and on the other, mathematical concepts to explore: "Powers, large numbers... and an outdated king", "Perimeters, areas... and a clever queen", "Order, conditions, logic... and a hen who does it all", "Fractions, shares... and a hungry fox", and many more to discover!



+80
cuentos accesibles
de 5 a 12 años y más

Find your stories according to age, the mathematical concepts to explore and the psychosocial skills to develop.

State changes

Visualization space

Probability

Logic

Numbers

Searching

Modeling

Reasoning

Sel-confidence

Error management

Critical thinking

Perseverance

Strategy

All resources are translated into **4 languages** and available on the website **myths-maths.eu**

Maths skills and tales

Stories speak through metaphors — and some of these also apply to mathematics. They can help students enter the world of math in a new way.

1. Why telling a story and unfolding a proof are alike

The hero lives their life, but twists and turns arise. They meet positive or negative characters, in a world governed by its own rules and internal logic. Eventually, unexpected events occur and the quest moves forward. At last, we understand

something we didn't know before.

The same is true of a mathematical proof. Faced with a familiar situation, we might begin with a few concrete examples, but we must then generalize and solve a much broader problem — at first, one as vast as a mountain. Yet with the help of ancient scrolls containing magical formulas effective under certain conditions, and after some work, the solution appears and we finally understand.

Remembering a proof is

much like retelling a story. One must identify the key moments – the timely arrival of a character, a bearded old Greek and his theorem – applicable under specific conditions, so that the internal rules can shift the context toward a happy ending. But if a detail is forgotten, the whole story may collapse.

2. Why we need to leave breadcrumbs...

Marking your path – leaving a trail, be it breadcrumbs or small stones – whether fragile or long-lasting, is a common feature of both fairy tales and mathematics. It allows us to find our way back,



provided we can trust the path. If not, we risk getting lost.

Taking notes is essential in mathematics. We write out the steps in detail. This relieves working memory and makes space for new information. If there's a mistake, we can go back and see where something was missed. If it works, we can follow the same steps again — and do it faster next time.

3. Why failure is a teacher

The hero tries many strategies. Success rarely comes at the first attempt. They try again and again, from different angles, with flexible approaches. This transforms the hero: they gain experience — like the Three Little Pigs, who can be seen as three versions of the same character, growing wiser with each try. Failure transforms you — and can make you better. Solving

a complex problem demands perseverance, originality, flexibility, and effort.

The same is true in both storytelling and mathematics. A good story is worth its weight in sweat. As Corneille put it: “To conquer without risk is to triumph without glory.”

4. Why appearances can be deceiving

Being fast or slow, big or small — none of that is good or bad in itself when facing a problem. What matters is taking the time to think, to delay the obvious answer, to show critical thinking. Because what seems simple is often more winding in stories. You have to prove your worth — just as a mathematical statement must be proven rigorously and formally. A simple pile of evidence isn't enough. Lies can hide behind what seems obvious; a small problem might be hard to solve, and

a major one might yield to a clever trick — simple yet powerful.

5. Sometimes, not understanding means not accepting the framework

The world of a story may not make sense at first glance. One must assume certain things, accept certain axioms: animals can talk, characters might be as small as a thumb... and that creates a context in which specific twists are consistent with the story's internal logic.

The same applies to most mathematical concepts. One must accept that things work this way or that. Sometimes, "I don't understand" simply means "I don't accept your axioms."

We need to realize that sometimes, there is

nothing to explain — just a few axioms to accept as they are. Otherwise, the story can't unfold.

Christian Mercat, mathematician



With Myths & Maths storytelling at school means...

1. **Listening actively** 
 2. **Creating representations**
 3. **Imagining** 
 4. **Experimenting** 
 5. **Memorizing**
 6. **Persevering** 
 7. **Cooperating**
 8. **Speaking in front of others** 
 9. **Developing vocabulary**
 10. **Building self-confidence** 
- = Math? We can all do it!**

Tales and numbers

Two ancient ways of
making sense of the world.

“Imagination is the true ground of
scientific growth.”

Albert Einstein

“Imagination is the central
technique in mathematics.”

David Bessis

“In mathematics, constraint is
very real — and the creativity it
generates is immense.”

Cédric Villani

“Error is not just an obstacle along the
path — it is also part of the journey.”

Cédric Villani

“The real voyage of discovery
consists not in seeking new
landscapes, but in having new
eyes — seeing the world through
someone else’s.”

Marcel Proust

What if tales could help us teach mathematics more effectively?

Searching, doubting, imagining, trying again... these are steps shared by both the hero of a tale and the student facing a mathematical problem.

This project is for teachers in early years, primary, and lower secondary education.

It offers practical resources for approaching mathematics differently: by embracing imagination, making mental processes visible, and openly addressing the metacognitive dimensions of learning.

Contact us!

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Scan to access the project website
www.myths-maths.eu

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Erasmus+

Enriching lives, opening minds.

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